



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

July 31, 1984

TO: Board of Oil, Gas and Mining
FROM: Mary M. Boucek, Permit Supervisor/Reclamation Biologist *MMB*
RE: Final Approval, St. George Mining Corporation, Apex Mine,
ACT/053/004, Washington County, Utah

The Division of Oil, Gas and Mining (DOGM) technical staff has completed its review of the Mining and Reclamation Plan (MRP) submitted by St. George Mining Corporation for the Apex Mine Project and has determined that the MRP satisfies the requirements of the Utah Mined Land Reclamation Act of 1975.

The required 30-day public comment period has expired with no negative comments being received. A surety bond in the amount of \$54,389.00 (1985 dollars) has been posted by the operator.

The staff requests that the Board concur with approval of this surety bond and the issuance of Final Permit Approval. An Executive Summary and surety estimate are attached for your review and information.

MMB/btb
Attachments
cc: Jim Smith, DOGM
Steve Cox, DOGM
97210

EXECUTIVE SUMMARY

Mine Name: <u>Apex Mine</u>	I.D. No. <u>ACT/053/004</u>
Operator: <u>St. George Mining Corporation</u>	County: <u>Washington</u>
<u>50 East 100 South</u>	New/Existing: <u>New</u>
<u>St. George, Utah 84770</u>	Mineral Ownership: <u>Private</u>
Telephone: <u>(801) 628-3239</u>	Surface Ownership: <u>Private</u>
Contact Person: <u>H. Lutz Klingman</u>	Lease No.(s): <u>N/A</u>
Life of Mine: <u>13 years</u>	Permit Term: <u>1 yr (concurrently w/bond)</u>
Legal Description: <u>Secs. 6 & 7, T. 43 S., R. 17 W; Secs. 1 & 12, T. 43 S., R. 18 W</u>	
Mineral(s) to be Mined: <u>Gallium, Germanium, Copper, Zinc, Silver</u>	
Mining Methods: <u>Mechanized Cut and Pneumatic Fill</u>	
Acres to be Disturbed: <u>8.1</u>	
Present Land Use: <u>Wildlife Habitat/Mining</u>	
Postmining Land Use: <u>Wildlife Habitat</u>	
Variances from Reclamation Standards (Rule M-10) Granted: <u>M-10(14)</u>	

Soils and Geology:

Soil Description: Classified by the Soil Conservation Service as rock land (RO). No soil descriptions were made at the minesite since soil development and profiles are not present as a typical pedon.

pH: NA

Special Handling Problems: Site consists of 70% rock outcrop and 30% soils which are too shallow to strip.

Geology Description: The ore is located in the Callville limestone formation as a hydrothermally-deposited limonite/goethite mineral deposit along the Apex Fault.

Hydrology:

Ground Water Description: No aquifers have been identified; no ground water is expected to be encountered.

Surface Water Description: No intermittent or permanent streams exist on-site; ephemeral drainage will be routed around distured area.

Water Monitoring Plan: None.

Ecology:

Vegetation Type(s); Dominant Species: Pinyon/Juniper Woodland.

Percent Surrounding Vegetative Cover: 30-35%.

Wildlife Concerns: None.

Surface Facilities: Change house & field office, workshop, water storage tank, compressor, fuel storage area, transformer & substation, crusher & screen, ore stockpiles

Mining and Reclamation Plan Summary: See attachment.

Surety:

Amount: \$54,389.00

Form: Cash Bond

Renewable Term: One year.

During Operations:

1. St. George Mining Corporation will reactivate the old Apex Mine in order to produce gallium, germanium, copper, zinc and silver. The old mine is being rehabilitated and a surface cleanup program has been initiated.
2. The present underground mining method is a mechanized cut and pneumatic fill. Duration of mining operations at the Apex Project site is estimated to be 13 years.
3. Ore will be transported to the surface, screened, crushed and hauled off-site for a distance of 7.5 miles to the processing facility which is on the Shivwits Indian Reservation.
4. Working stockpiles of ore, low grade ore and mine wastes will be maintained on-site. Waste rock generated during underground mining will be crushed, screened and used as pneumatic fill for ground support in the mine. In addition to ore produced during mining, the existing upper mine dump containing low grade ore will be reclaimed.

After Operations:

1. All salvageable equipment and buildings will be removed, portals will be sealed and secured and foundations will be broken up and disposed of in the waste dump. Powerlines directly supplying the mine will be removed.
2. The site will be graded to blend with the natural topography and all flat surfaces will be scarified. The existing upper dump area will be graded down to the original limestone outcrop surface.
3. Disturbed areas, including roads, will be mulched, fertilized and revegetated. Currently proposed revegetation methods will be tested on the upper dump area during years 3 and 4 of operations and monitored for three years to determine success and modify the final reclamation procedures, if indicated.

BOND ESTIMATE

St. George Mining Corporation
Apex Mine
ACT/053/004, Washington County, Utah

July 31, 1984

1. Sealing of Shafts and Portals

Labor - 1 foreman	\$ 29.20
2 laborers	\$ 43.90
1 carpenter	\$ 27.70
	<u>\$100.80/hr =</u>
	\$ 95.66/hr
1 light truck	\$ 14.10
	<u>\$109.76</u>

Time = 16 hrs @ \$109.76 X .994 (index) = \$1,745.62

Material (8.3 times original estimate)

Lumber	\$ 6,225.00
Steel	\$ 2,075.00
Concrete, 50 yds @ \$55	\$ 2,750.00
	<u>\$11,050.00</u>

\$12,795.62

2. Site Cleanup, Labor and Equipment

1 foreman	\$ 29.20/hr
2 laborers	\$ 43.90/hr
	<u>\$ 73.10/hr</u>
1 pickup	\$ 14.10/hr
1 haul truck & operator	\$ 57.65/hr
	<u>\$144.85/hr</u>

Time = 24 hrs @ \$144.85/hr X .994 (index) = \$3,455.54

3. Removal of Structures, Labor and Equipment

1 foreman	\$ 29.20/hr
4 laborers	\$ 87.80/hr
	<u>\$117.00/hr</u>
1 pickup	\$ 14.10
1 flat-bed truck & operator	\$ 41.75
1 forklift & operator	\$ 37.35
	<u>\$210.20</u>

Time = 32 hrs @ \$210.20/hr X .994 (index) = \$6,686.00

4. Concrete and Foundation Removal, Labor and Equipment

1 foreman	\$ 29.20/hr
1 cat & operator	\$150.90/hr
1 haul truck & operator	\$ 57.65/hr
1 loader & operator	\$ 70.45/hr
	<u>\$308.20/hr</u>

Time = 6 hrs @ \$308.20/hr = \$1,849.20 X .994 (index) =
\$1,838.10

5. Grading and Scarification, Labor and Equipment

1 cat & operator	\$150.90/hr
1 grader & operator	\$169.50/hr
	<u>\$320.30/hr</u>

Time = 12 hrs @ \$320.30 = \$3,843.60 X .994 (index) =
\$3,820.54

6. Final Site Preparation and Stabilization

1 foreman	\$ 29.20
2 laborers	\$ 43.80
1 truck & driver	\$ 30.01
	<u>\$103.01</u>

Time = 24 hrs @ \$103.01 = \$2,472.24 X .994 (index) =
\$2,457.41

7. Mobilization \$590.00

8. Revegetation

Mulch - 2T/ac @ \$100/T	\$ 200.00/ac
Fertilizer - 150#/ac X \$7/50#	\$ 21.00/ac
Seed Mix - \$1,029.20/ac	\$1,029.20/ac
	<u>\$1,250.20/ac</u>

8.1 ac @ \$1,250.20/ac = \$10,126.62

7.7 acres original submittal
.362 additional acreage
8.062

Matting \$250.00

Labor

1 farm tractor & operator - 24 hrs @ \$32.30/hr	\$ 775.00
Laborer - 160 hrs @ \$21.95/hr	\$3,512.00

SUMMARY

1. Sealing of Shafts and Portals	\$12,795.62
2. Site Cleanup	\$ 3,455.54
3. Removal of Structures	\$ 6,686.00
4. Concrete and Foundation Removal	\$ 1,838.10
5. Grading and Scarification	\$ 3,820.54
6. Final Site Preparation & Stabilization	\$ 2,457.41
7. Mobilization	\$ 590.00
8. Revegetation	\$14,663.62
	\$46,305.83
10% Contingency	\$ 4,630.58
	\$50,936.41 (1984 dollars)
TOTAL	\$50,936.00

93660